PARTNERSHIP FOR *Life*

LSU AND MARY BIRD PERKINS CANCER CENTER TEAM UP TO BEAT CANCER

BY BRENDA MACON | PHOTOS BY LARRY HUBBARD

LSU AND MARY BIRD PERKINS CANCER CENTER (MBPCC) have an ongoing partnership that benefits not only both institutions, their students, and their staff but also the citizens of Louisiana – particularly those in the south and central parts of the state. This partnership is providing students with unique training opportunities, researchers with facilities and resources that are hard to find, and most important, patients with the latest innovations and techniques for improved outcomes in their cancer treatment.

The design of the collaboration is to leverage the strengths of both institutions. The partnership gives MBPCC access to graduate students, multidisciplinary faculty, advanced computer technology, and all of the other advantages of University resources. LSU benefits by having access to clinical training for its students and clinical facilities for its faculty research. Both benefit by empowering faculty and students and providing them with opportunities to contribute to advancing patient treatment options. These advantages are fueling interest in maximizing collaboration.

The partnership has expanded and improved both programs and has allowed levels of treatment and research that otherwise would not be possible. This collaboration began years ago, first with the establishment of the medical physics program in the 1980s, and then with the hiring of two visionaries from Texas who saw the potential for building something great when they put their heads together.

Chief of Physics Dr. Jonas Fontenot.

Mary Bird Perkins Cancer Center CEO and President Todd Stevens.

A LITTLE BIT OF HISTORY

Things really started cooking when MBPCC CEO and President Todd Stevens (1988 BACH BUS) arrived at the cancer center in 1999 from the University of Texas M.D. Anderson Cancer Center in Houston and previously U.S. Oncology from 1997 to 1999. Once he had the lay of the land, he began recruiting Dr. Kenneth Hogstrom, who was considering retirement from M.D. Anderson. Hogstrom had been with M.D. Anderson for close to twenty-five years and had reached what he thought was the pinnacle of his career. After having served for sixteen years as chair of the medical physics department there, he was ready for a new challenge. Stevens gave him reasons to build something great in Baton Rouge. The two of them put their heads together to develop a plan for the future of MBPCC even before Hogstrom officially had joined the staff.

Those early meetings were primarily for planning Stevens' strategy at MBPCC. Stevens valued and respected both Hogstrom's business acumen and his knowledge of medical physics. During the course of the meetings, Stevens planted the idea of Hogstrom making a second career in Baton Rouge into their strategy. At the time, LSU had a medical physics program that had been around for a while, but it was small and not accredited. On the flip side, MBPCC had the resources for new technology but limited medical physics staff to expand its treatment program. Hogstrom knew how to bring the two programs into sync to create a partnership that would make both institutions stronger.

Then, in 2003, the medical physics program director at LSU retired, so the physics department needed someone to fill that vacancy. Moreover, Hogstrom's wife, a Louisiana native and an LSU alumna, was ready to move back closer to her alma mater. Hogstrom, who is originally from Houston, felt that Baton Rouge was close enough to his hometown that it would be like home. As if by fate, everything played perfectly into the plan to bring Hogstrom to Baton Rouge.

Having been hired into two positions – serving as the chief of physics at MBPCC and as professor and director of the medical physics program in the Department of Physics & Astronomy – Hogstrom began to help Stevens implement their plans. At MBPCC, they increased and improved radiation therapy technology, equipment, and medical physics staffing to bring the center to the forefront of radiation therapy. Hogstrom knew and had worked with Stevens and many of the MBPCC radiation oncologists previously at M.D. Anderson, so he was a natural fit on the team, and the work went well, adding several state-of-the-art treatment options and new machines.

That is where LSU's medical physics program came into play. In his newly appointed director's position, Hogstrom was charged to build the small program into a stronger, larger, and fully accredited field of graduate education at LSU. He, himself, had an even bigger goal: to have one of the best medical physics programs in the U.S. and in the world. Attaining accreditation for the graduate degree programs was critical to that goal, so he worked from his arrival in 2004 to make that happen. In 2006, the master's degree program was accredited by the Commission on Accreditation of Medical Physics Education Programs, Inc. (CAMPEP), and in 2011, the Ph.D. program was added and was accredited the same year. Also, Hogstrom negotiated that LSU and MBPCC jointly create an endowed chair for the program director, and in 2006, he became the inaugural holder of the Dr. Charles M. Smith Chair of Medical Physics.

THE PROGRAM TODAY

Hogstrom pointed out that what was once experimental is now the standard of care. To keep pace with the rapidly changing and progressing field of cancer treatment, both LSU and MBPCC must have adequate funding. For example, part of the plan that

One of the latest advances in equipment is the Versa HD Elekta that delivers a full dose of radiation in one or two arcs around the patient. Photo provided by Mary Bird Perkins Cancer Center

he and Stevens discussed was to bring helical tomotherapy, an effective and relatively recent type of treatment, to MBPCC. Stevens was able to find funding for this relatively new technology, which gives students an edge because they are training on the latest equipment. In addition to funding for new technology, having money for student support and faculty research is critical to the program. "The challenge is to maintain our fiscal resources so that we continue to move forward," Hogstrom commented.

"Our [M.S.] program is tougher than any other of its kind in the U. S.," Hogstrom explained. "Ours is three years instead of the usual two years and requires a research thesis. We also require more courses. For example, we offer three radiation therapy physics classes where most programs only have one. All of this makes the program the best in the U. S., which is to say, in the world. Our graduates are so good that they get offers when many from other programs struggle."

Hogstrom officially retired from LSU in 2011, but he remains active as an emeritus professor and still maintains strong ties with both institutions, as he continues in a part-time capacity at MBPCC. The program and the partnership have grown remarkably since 2003, and two new leaders are continuing the progress and successes for which both LSU and MBPCC have become known. Dr. Jonas Fontenot is the current chief of physics at MBPCC, and Dr. Wayne Newhauser is professor and director of the medical physics program and holder of the Dr. Charles M. Smith Chair of Medical Physics. Both bring experience, gravitas, and strong leadership to the partnership. Both are sold on the benefits of working together to make great things happen.

"This partnership is a win-win-win," Newhauser commented. "We benefit from the clinical expertise at MBPCC; they benefit from our research resources; and patients benefit from cutting edge treatment programs that arise from new knowledge derived from the research. This partnership has gained a reputation nationally and internationally because of the work we are able to do together. Some of the best students in the world are applying to our program because of the collaboration. Without this partnership, we could not provide our students with this high quality of education."

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Under their leadership, the medical physics program has continued to address the needs of a field that is expanding as new technologies and treatments are introduced. The program now includes a CAMPEP-accredited radiation oncology physics residency component at MBPCC, which is a great benefit for graduating M.S. and Ph.D. students. Medical physics is one of only two (the other is genetics) non-physician medical disciplines certified under the American Board of Medical Specialties (ABMS), which requires completion of a residency program to sit for the board certification exam. The exam is administered by The American Board of Radiology, and board certification qualifies medical physicists for clinical practice. Currently, about 300 medical physics M.S. and Ph.D. degrees are awarded each year in the U.S.; only about 125 medical residency positions are available, which means that competition for admission to those slots is

Top left: Art adds beauty and warmth to the building; Top right: Dr. Kenneth Hogstrom, right, was instrumental in creating the partnership between LSU and the Mary Bird Perkins Cancer Center, serving in leadership positions at both institutions. Dr. Wayne Newhauser, left, is the current director of the medical physics program at LSU, continuing the leadership that makes the program one of the best in the world.

intense. Students who receive their graduate training in the LSU program are given priority in the residency program at MBPCC through a matching service very similar to that used by physician residency programs.

The MBPCC residency program is a consortium that includes programs at MBPCC in Baton Rouge, Willis Knighton Cancer Center in Shreveport, and the University of Mississippi Medical Center in Jackson, Mississippi. "The program is organized in a 'hub-and-spokes' model," residency program director Fontenot explained. "Each year, our partners admit one resident in each facility, and we admit two. Currently, we have nine residents. The program is in high demand: 100 M.S. and Ph.D. graduates applied for the four residency slots in 2016."

Newhauser added, "The talented students who receive this high quality education graduate from the program are able to save lives wherever they go. The quality of these graduates is well known in the field, and major cancer treatment centers, like the Mayo Clinic, have eagerly hired LSU graduates. However, many, close to fifty percent, elect to stay in the Gulf region, and about twenty-five percent have remained in Louisiana.

MBPCC plans to become **The First** *in the world to develop technology for intensity modulated bolus ECT.*

BOTTOM LINE: PATIENT CARE

The quality of the students in the graduate program allows for this advantage and also gives faculty researchers young mentees who often come up with new ideas for existing concepts. "Our students always have a fresh outlook," Fontenot explained recently. "Student research projects are determined by a number of factors, including ongoing research, clinical needs, funding, and student interest."

Wayne Newhauser concurred, commenting, "Students are cross-pollinators. They talk with each other, with other faculty, and with others outside the program. They bring new ideas and perspectives that make the research better." Both Newhauser and Fontenot agree that medical physics students are very creative in devising their projects, both M.S. theses and Ph.D. dissertations, often finding new uses for existing equipment and techniques.

Fontenot added, "Graduate students have contributed significantly to MBPCC research, which has advanced radiation therapy technology for its patients, as well as those throughout the United States and world."

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and around the world

Examples of how student research is benefitting survivors are numerous and include work in several areas. Radiation oncologists can better spare normal tissues in treating cancers in and adjacent to the brain. The medical physics team developed and applied methods that measure the accuracy of targeting disease in the head using image-guided radiation therapy (IGRT). This research enabled MBPCC medical physicists to use one of the machines in the MBPCC oncology unit called Brainlab to treat trigeminal neuralgia, a debilitating and painful condition.

Also, patients receiving postmastectomy radiation therapy (PMRT) now have better outcomes thanks to a technique developed by MBPCC medical physicists that uses rotational intensity modulated radiotherapy (IMRT) to treat the chest wall. Research in this area is ongoing, with emphasis on breath-hold techniques to further improve treatments and examination of long-term side effects.

Treating cancer in the thorax and abdomen is also often impacted by the patient's breathing, which means that the irradiated area becomes a moving target. MBPCC medical physicists have an ongoing research program in respiratory management to develop techniques for minimizing this problem. Recently, a deep-inspiration, breath-hold procedure that can reduce heart dose, and hence toxicity, was developed for use in radiating intact breast and postmastectomy breast cancers.

Radiation oncologists can now use electron beams to irradiate superficial cancers of the nose, scalp, chest wall, and extremities with improved sparing of adjacent normal tissues and organs like salivary glands, eye, spinal cord, and lung. MBPCC medical physicists and LSU students have researched and translated bolus electron conformal therapy (ECT) technology through .decimal LLC (Sanford, Fla.) to approximately 300 radiotherapy centers in the United States. This research continues as MBPCC plans to become the first in the world to develop technology for intensity modulated bolus ECT.

Another area of research at LSU that has gained national attention is the use of 3-D printing technology to identify and define tumors and isolate them from healthy tissue. This technology will initially be used in developing plans of treatment to target cancerous cells more efficiently, which will make treatment more tolerable for patients and can prevent potentially fatal side effects. The models developed in 3-D are personalized for each patient and provide detailed information about the location and other aspects of the tumors, which is especially important with tumors that require specialized reconstruction.

To minimize the risk of treatment complications, especially those caused by the radiation treatment itself, verifying the radiation calculations with measurements is of utmost importance. Medical physicists have been aware that, while the greatest percentage of the radiation used in treatment targets the cancerous tissue, a certain amount "leaks" to areas around the cancer. Until recently, scientists had no way of calculating how much or how great that leakage is. Lydia Wilson Jagetic, a Fulbright Scholar who recently developed an algorithm to calculate that leakage all the way to its outer edge, is currently pursuing her Ph.D. degree at LSU.

Training students in medical physics is, after all, to provide patients with the best care for the best possible outcomes. Through this partnership, the program's research is helping define the standard of care, which translates to better patient care.

WORKING TOGETHER, MAKING DECISIONS FOR THE FUTURE

Additionally, the center employs some of the most up-to-date equipment, such as linear accelerators that contain CT scanners and rotational treatment delivery methods that reduce the amount of time required for treatment. One of the latest advances in equipment is the Versa HD Elekta that delivers a full dose of radiation in one or two arcs around the patient. These machines replace what Stevens termed "the four-field box" treatment that used to be standard and that was far less accurate and more invasive than today's machines.

"We're practicing precision medicine," Stevens commented, "and adhering to the spirit of the Hippocratic Oath to 'do no harm.' We're working to treat only what needs to be treated without affecting surrounding healthy tissue."

Stevens referred to an article by Intel's Andy Grove that appeared in the May 13, 1996, issue of Fortune. As Groves points out in the article, cancer research was often reported in a highly biased atmosphere that favored whatever the pet approach of the researcher was. That insular environment is giving way to one that allows researchers to share information in real time. "We're seeing those walls break down," Stevens explained. "A good research idea should be shared as easily as a review of a play. People want to solve the problem of improving patient care." Collaborative research and cross-pollination of ideas will make that happen.

Stevens encourages anyone who wants to support the LSU/MBPCC partnership specifically and cancer research in general to advocate for STEM (Science, Technology, Engineering, and Math) education at all levels, from kindergarten through college; support university research; invest in collaborative efforts like this one that include education and research; and encourage students to become researchers. "At MBPCC and LSU, your gift will go directly to benefit medical physics research and training."

Brenda Macon is a freelance writer and editor in Baton Rouge.

Helping Survivors Heal

"Surrounding Patients with Everything They Need to Thrive"

Larry Hubbard (1955 BACH A&D) has come to know the staff at Mary Bird Perkins-Our Lady of the Lake Cancer Center quite well over the course of the last several years. He was diagnosed with cancer in his salivary glands more than six years ago, and more recently has undergone treatment for skin cancer. The cancer in his salivary glands required both surgery and subsequent radiation therapy.

Despite the fact that a cancer diagnosis almost always comes with fear and anxiety, Hubbard has fond memories of the Cancer Center's staff. "The atmosphere there, from my standpoint, was absolutely marvelous," he reminisced. "I particularly liked and probably needed the friendliness starting at the front desk and pervading throughout the center."

That atmosphere has been meticulously created to enhance each patient's treatment and ultimate recovery. The facility began a major renovation in 2012, which administrator Linda Lee (1982 MAST HS&E) has overseen with great care. "We tried to think of everything – bringing in natural light to show there is still a beautiful world out there. Because we recognize the importance of the nature elements in making our patients feel comfortable, we make sure that all of them have a view of the sky while they are undergoing chemotherapy here, which can take several hours," she said. "We want patients to feel welcome, to feel embraced, from the very first moment they arrive – even before they enter the building."

Patients are treated as honored guests at the front of the building, with valets assisting them in the circular drive and escorting them inside to the two-story atrium. The focal point in the atrium is an original stained glass wall by local artist Stephen "Steve" Wilson (1975 BACH A&D, 1978 MAST A&D) that extends from the ceiling nearly to the first floor. The building was carefully designed to capture an abundance of natural light and to bring in natural elements, with glass, stone, and wood the most prominent materials. Throughout, artwork by local artists adds even more warmth and beauty to the space.

Leaving lovely architecture and art aside for a moment, however, Lee gives full credit to the physicians and staff for the center's successes and high quality of care. "The guts [the people] of this building were beautiful even before the building was pretty," she said. "The staff here is amazing. We consider our patients to be survivors from the moment of the initial diagnosis, and our staff are deeply committed to being active and supportive participants in their care."

Hubbard's experiences at the Cancer Center have convinced him that their approach works. Each of the main treatment areas houses a ship's bell, and patients completing their treatment are encouraged to ring it on their way out of their last appointment as a symbolic gesture of celebration. They have completed treatment, they have survived and are thriving. When the bell rings, everyone – staff, patients, and visitors – all stop and applaud. Hubbard was finally able to ring that bell in March 2016.

From top: 1. Larry Hubbard rang the "celebration bell" on his last day of treatment at Mary Bird Perkins-Our Lady of the Lake Cancer Center; 2. Larry Hubbard survived two bouts of cancer and credits Mary Bird Perkins-Our Lady of the Lake Cancer Center for helping him through that ordeal; 3. Many original works of art adorn the walls, hallways and treatment areas of the Cancer Center. This one, titled Waters of the World by Robert Rector, presents the viewer with a comforting sense of calm and serenity through its unique, multi-dimensional representation of our world's waters; 4. This detail from the Meditation Art Wall, created by local artist Stephen "Steve" Wilson, greets guests as they enter the Cancer Center's light-filled atrium on the first floor. The back of the piece offers an entirely different view on the second floor where it helps to enclose a meditation room where patients, family members and staff can spend a quiet moment of reflection.

LSU ALUMNI MAKE AN IMPACT

LSU has many points of contact at Mary Bird Perkins-Our Lady of the Lake Cancer Center. From the phenomenal partnership that has expanded the medical physics program to the social workers who manage the care of patients every day, the University has touched the lives of every cancer survivor who walks through the doors of the center.

Top left: Kristina Little becomes a part of the lives of the patients she navigates through treatment; Top right: Administrator Linda Lee.

Administrator Linda Lee (1982 MSW), recently commented, "Our staff are chosen for their compassion and capacity for kindness. It's a privilege and a great responsibility to interact with someone who has had a diagnosis of cancer, and we take that very seriously. At all of our meetings, we figuratively put the patient in the center of the room. Keeping that patient in the middle of the meeting focuses and clarifies everything we do. We cloak our patients with an array of services to help heal not only their bodies, but their minds and spirit as well. Healing art, meditation, massage, and other mind-body programs enhance the effects of conventional chemotherapy, radiation and surgery. We understand that the patient's positive outlook and reduced stress level help release hormones that stimulate the immune system and aid in healing."

Many of those staff members are LSU alumni, and one of them, Kristina Little (2004 BACH H&SS, 2011 MSW), became the first recipient of the Sister Linda Constantin Courage and Compassion Award in 2015. She worked with Professor Emily Elliott on her Honors College thesis, which was on children, learning, and distraction. However, when she decided to pursue a graduate degree, she realized that one aspect of psychology that intrigued her was the role that environment plays in mental health, so she chose the field of social work. As she worked toward her master's degree in social work, she also realized that she preferred to work with older adults, earning a certificate in gerontology for her work with aging patients, some of whom were diagnosed with Alzheimer's. In yet another shift in focus, Little reflected on the internship that she held in her foundation, or first, year of the graduate degree program. During that year, she worked with Cancer Services of Greater Baton Rouge. "I was fascinated by the science of cancer," she recalled. "Not just the disease itself, but the entire field of oncology – the process of treatment, everything. I wanted to learn more."

Today, Little works with head and neck cancer patients who are undergoing treatment for some of the most disfiguring tumors among all the forms of cancer. "I had no idea what I was getting into," she remembered. "It took me about a year to understand thoroughly what these patients were going through, but those patients in that first year led me every step of the way. We all depend on the patients to teach us what to do to help them, and these people not only helped me learn what to do, they showed me strength that amazed and humbled me."

Linda Lee was also recognized recently for excellence in her profession, named one of eight Louisianians of the Year by myNewOrleans.com and Renaissance Publishing. She explained the connection between staff and patients, saying, "The intersection of the provider with the patient is a sacred engagement in which the patient entrusts his or her care to our team – 'Here I am, mind and body. I need help. Please help me.' That level of trust requires our compassion and commitment to providing the best care possible. Through this partnership, both patient and provider are changed. Those sacred engagements make you kinder and broaden your world."

Thinking OUTSIDE THE BOX

When exceptional researchers see the need for better techniques, they go beyond [their usual areas of expertise] to find answers. Sometimes those answers are found by combining unrelated and unusual bits of technology. In the case of Dr. Guang Jia, associate professor of physics, and Joseph "Joe" Steiner, a Ph.D. candidate who works with Jia, they pulled together radiation technologies, processes, and equipment from a variety of areas in medical physics to arrive at a better diagnostic tool for early detection of prostate cancer.

Dr. Guang Jia, left, and Ph.D candidate Joseph Steiner demonstrate the diagnostic apparatus that they developed.

Both Jia and Steiner recognized the deficiencies in standard prostate cancer diagnostic tools: False positives with PSA tests are in the range of eighty percent; digital rectal exams cannot provide definitive results; though CT scans yield high resolution images, they cannot differentiate soft tissue; and though MRI images can differentiate soft tissue, they have low sensitivity and low resolution and are noisy and slow. Since no one device or technique is ideal for diagnosing prostate cancer, Jia had the idea to combine several devices and techniques to create a new, more sensitive method.

Jia was aware that using MRI imaging with an endorectal coil improves resolution, and he and Steiner wondered if using an endorectal detector with the CT platform would provide even better resolution. They were also familiar with digital breast tomosynthesis, which uses low-dose x-ray projections over a limited range to produce pseudo three-dimensional images. The final piece of their puzzle was to find an additional sensor small enough to fit under the usually walnut-sized prostate to use with the endorectal probe; that small sensor was a dental x-ray plate, the same type used in many dentists' offices for oral x-rays. Finally, using iodine as a contrasting agent provides for better contrast.

Using these parts of existing technologies together enhances the benefits of each and ameliorates the down sides. With the device proposed by Jia and Steiner, resolution is ten times higher than using CT imaging alone. While the device is still in the prototype phase, tests using a phantom have yielded amazing results, potentially for both diagnosis and post-treatment imaging of brachytherapy seeds. The device could also be used to detect recurrent tumors that may be suspected when the patient has rising PSA results several years after the prostate has been removed. Using a kumquat to represent the prostate and a Styrofoam plug embedded with brachytherapy seeds, Jia and Steiner imaged their test phantoms using standard CT equipment and using their proposed technique. The contrast in resolution is stark. Structures that are only shadows or not visible at all appear clearly in the experimental images; the brachytherapy seeds, which are barely detectable in the standard images are brilliantly illuminated in the experimental ones.

This new detection method has the potential to advance the diagnostic protocols for prostate cancer and prevent needless additional testing and possibly unnecessary and drastic treatment. Biopsies, which present a significant risk to patients, would be prevented. Surgeries and unnecessary radiation therapy would be avoided. And perhaps equally important, patients would be saved from the anxiety of false positives – not knowing whether they actually have cancer or not and, even if cancer is detected, not knowing where the tumor lies, how aggressively it is growing (most prostate cancer is slow-growing), or which treatment option is best for an individual patient.

Combining these four technologies – the endorectal probe system from MRI, the CT platform, digital tomosynthesis, and the dental x-ray sensor – to create a completely new process is one of the remarkable aspects of research in a university environment. Jia attributes educating his to his ability to bring

Dr. Charles M. Smith, right, visits with recipients of his gift to the medical physics program, from left, Dr. Wayne Newhauser who holds the Dr. Charles M. Smith Professorship in Medical Physics; Andrew Halloran (2011 BACH SCI, 2015 MAST SCI); and Lydia Wilson Jagetic, a current graduate student in the program.

these technologies together to solve problems. They bring fresh ideas and new perspectives into the classroom, and Jia accepts the challenge to keep abreast of the technology in his field so that he can provide them with the best instruction possible. "Teaching has helped me think of various modalities," he explained. "Our students are the best! Take Joe [Steiner] for example. I give him the basic idea, and he can complete it by ninety percent without anything more from me."

Steiner graduated with a degree in physics from SUNY-Buffalo and subsequently worked in a position that required knowledge of mechanical engineering. This position gave him the opportunity to solve problems creatively and to design new equipment. The job also helped him understand that he needed something more. He discovered that, while physics seemed too theoretical, engineering was a little too applied for his taste, so he looked for graduate degree programs that would give him a little of both theory and application. "Medical physics is a happy medium," he commented. "It gives me the opportunity to work with theory to develop applications, and that works for me." Steiner's experience with machining to create tools from new designs fits very well with his research with Jia.

Jia received his Ph.D. from Ohio State University and is an ABR-certified diagnostic medical physicist. Jia has several years of experience in working with prostate cancer imaging as well as with joint cartilage imaging. His research at LSU and Mary Bird Perkins with improving diagnostic techniques for prostate cancer is yielding results with the development of a new device and technique. The research combines concepts and technology from at least four very different areas to address the issue of false positives with prostate-specific antigen (PSA) tests and digital rectal exams (DRE). His previous experience working with urologists and radiation oncologists led him to the understanding that diagnosticians needed a more sensitive device for detecting cancer in the prostate.

Jia also cites the cooperation among units at LSU that have aided his research and understanding of how other fields impact his own. For example, Fakhri al-Bagdadi, associate professor in the LSU School of Veterinary Medicine, has provided animal prostates to help the researchers have a better understanding of the anatomical structures they will be imaging, and Alumni Professor of Biological Sciences Dominique Homberger has given Jia insight regarding 3-D imaging of human anatomical structures. Jia and Steiner both work not only on the main LSU campus and at MBPCC but also at Pennington Biomedical Research Center, where they collaborate on additional research.

Jia is also sold on the partnership that LSU enjoys with Mary Bird Perkins Cancer Center and on the medical physics program itself. "Where I came from, the academic ranking is higher than that of LSU, but they don't have a medical physics program," he said. "Also, Mary Bird Perkins has a residency program that provides our own students with opportunity. Those things were very important in my decision to come to LSU."

Making A Difference:

GIVING BACK TO SAVE LIVES

DR. CHARLES M. SMITH

(1951 BACH H&SS, 1955 MD-NO) practiced family medicine for thirty-five years in Sulphur, La. "I liked all aspects of medicine and chose not to specialize in a particular area. When I started, I practiced everything from pediatrics to geriatrics – delivering babies, making house calls, even treating chemical dependency.

"After I retired, I had a tumor that could have cost me my life. The radiation, chemotherapy, and cancer treatment saved my life. Supporting the medical physics program at LSU is a way of giving back. Because of the wonderful relationship between the College of Science and Mary Bird Perkins Cancer Center, the medical physics program has really bloomed into the creation of a state-of-the-art training facility, and with their new physical plant, the community, the region, and the state will benefit. They're educating and training medical physicists, but the scope of this collaboration is much broader than I initially thought and has far exceeded my expectations. We're on the cusp of curing a lot of tumors.

"Whether they contribute to the medical physics program or some other worthwhile effort, I hope other alumni will choose to give back to the University. We need more money in support of research. I would like to see alumni take an interest in some area at the University to support, no matter what it is."

Radiation Therapy Provides RELIEF FOR MIKE VI

BY GINGER GUTTNER | PHOTO BY EDDY PEREZ

Mike VI undergoing treatment at Mary Bird Perkins-Our Lady of the Lake Cancer Center.

IN MAY 2016, MIKE VI was diagnosed with a spindle cell sarcoma (Mike was examined and had a biopsy after his caretakers noticed a slight swelling in his face). On May 28, Mike underwent radiation treatment simulation at Mary Bird Perkins-Our Lady of the Lake Cancer Center to create the devices that were to be used to help position Mike for stereotactic radiotherapy (SRT) and to acquire the CT images used to map the tumor in his face. On June 1, Mike received radiation therapy at the Cancer Center.

According to Dr. David Baker, LSU's attending veterinarian and professor at the LSU School of Veterinary Medicine (LSU SVM), the swelling on the right side of Mike's face has completely subsided, suggesting that the tumor responded to the radiation treatment. His attitude, weight, and appetite are normal, and he does not appear to be in pain.

The precise, concentrated radiation dose was delivered in a single treatment and optimized to avoid damaging normal tissues surrounding Mike's cancer. This treatment is not curative but should extend Mike's life for perhaps one or two years and allow him to live comfortably for some time. Eventually, the radiation-resistant cells remaining in the tumor will resume growth.

The Cancer Center was selected to provide radiation therapy because of its longstanding relationship with LSU. For years, the cancer center's medical physicists have provided consultation and approval for animals receiving radiation treatment at the LSU SVM. The Cancer Center offered the advanced technology and facilities necessary for Mike's SRT treatments, which occurred outside of normal business hours.

Ginger Guttner is director of public relations at the School of Veterinary Medicine.